

ECUACIONES DE PRIMER GRADO

FICHA 2

Resuelve las siguientes ecuaciones:

a) $4(10-2x)=3(x-5)$

b) $4x - 5 = \frac{x}{2} + 16$

c) $x + a = 2a$

d) $\frac{x-3}{2} = 2(1-x)$

e) $3x + 2 = 5(x-2) + \frac{1}{2}$

f) $4 + 3\left(\frac{x}{2} - 1\right) = 4x - 5$

g) $3\left(x + \frac{x}{2}\right) = 4 + x$

h) $3(x+2)+(x-2) = 5(x-1)-(x-9)$

i) $5-3(z-5) = 3 + 4z$

j) $5x - 1 = 2(x + 3) + 3x - 7$

SOLUCIONES

$$40 - 8x = 3x - 15 \Rightarrow -8x - 3x = -40 - 15$$

$$\text{a)} \Rightarrow -11x = -55 \Rightarrow x = \frac{-55}{-11} \Rightarrow x = 5$$

$$\text{b)} \frac{8x - 10}{2} = \frac{x}{2} + \frac{32}{2} \Rightarrow 8x - 10 = x + 32$$

$$8x - x = 32 + 10 \Rightarrow 7x = 42 \Rightarrow x = 6$$

$$\text{c)} x = 2a - a \Rightarrow x = a$$

$$\text{d)} \frac{x - 3}{2} = 2 - 2x \Rightarrow x - 3 = 4 - 2x$$

$$\Rightarrow x + 2x = 4 + 3 \Rightarrow 3x = 7 \Rightarrow x = \frac{7}{3}$$

$$\text{e)} 3x + 2 = 5x - 10 + \frac{1}{2} \Rightarrow \frac{6x + 4}{2} = \frac{10x - 20}{2} + \frac{1}{2} \Rightarrow 6x + 4 = 10x - 20 + 1 \Rightarrow$$

$$6x - 10x = -20 + 1 - 4 \Rightarrow -4x = -23 \Rightarrow x = \frac{23}{4}$$

$$\text{f)} 4 + \frac{3x}{2} - 3 = 4x - 5 \Rightarrow \frac{8}{2} + \frac{3x}{2} - \frac{6}{2} = \frac{8x - 10}{2} \Rightarrow 8 + 3x - 6 = 8x - 10 \Rightarrow$$

$$3x - 8x = -10 - 8 + 6 \Rightarrow -5x = -12 \Rightarrow x = \frac{12}{5}$$

$$\text{g)} 3x + \frac{3x}{2} = 4 + x \Rightarrow \frac{6x}{2} + \frac{3x}{2} = \frac{8 + 2x}{2} \Rightarrow 6x + 3x = 8 + 2x \Rightarrow$$

$$6x + 3x - 2x = 8 \Rightarrow 7x = 8 \Rightarrow x = \frac{8}{7}$$

$$\text{h)} 3x + 6 + x - 2 = 5x - 5 - x + 9 \Rightarrow 3x + x - 5x + x = -5 + 9 - 6 + 2 \Rightarrow$$

$$0x = 0 \Rightarrow \text{Solución : todos los números reales}$$

$$5 - 3z + 15 = 3 + 4z \Rightarrow -3z - 4z = 3 - 5 - 15$$

$$\text{i)} \Rightarrow -7z = -17 \Rightarrow z = \frac{17}{7}$$

$$\text{j)} 5x - 1 = 2x + 6 + 3x - 7 \Rightarrow 5x - 2x - 3x = 6 - 7 + 1 \Rightarrow 0x = 0$$

$$\text{Solución : todos los números reales}$$